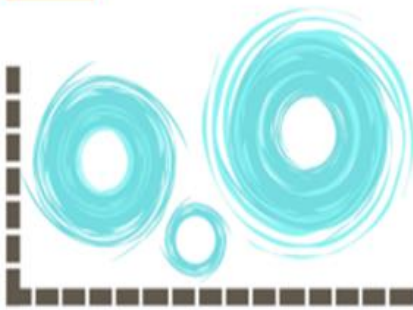


NEW ORLEANS HURRICANE PROTECTION SYSTEM



Designed to contain the river
DURING PERIODS OF HEAVY FLOODING

FIRST LEVEES AND FLOODWALLS were initially built between **1717** to **1727**

MEASURED THREE FEET IN MOST LOCATIONS

1985 Surge barriers replaced with **TALLER LEVEES**

AUGUST 29, 2005
HURRICANE KATRINA made landfall

FAILURE

LEVEES AND FLOODWALLS

in place were breached

DUE TO ENGINEERING

and

ENGINEERING-RELATED

policy failures

CAUSES

COLLAPSE OF SEVERAL LEVEES with concrete floodwalls (I-walls)

OVERTOPPING – water poured over the tops of the levees and floodwalls, eroding structures away

Levee **BUILDERS USED INCORRECT DATA** to measure levee elevations

Levees were **NOT BUILT HIGH ENOUGH**, some 1 to 2 feet lower than intended design elevation

Hurricane protection system was **CONSTRUCTED AS INDIVIDUAL PIECES**

HURRICANE KATRINA AND SUBSEQUENT LEEVE FAILURES RESULTED IN



1,118
deaths



135
missing,
presumed
dead



\$21 BILLION
in residential
property
damage



\$6.7 BILLION
in public
infrastructure
damage



124,000
thousand
jobs lost

INFLUENCE

NEW ORLEANS

\$14.5 BILLION NETWORK of levees, floodwalls and pumps installed around New Orleans metro area

BEST FLOOD CONTROL SYSTEM of any coastal community in the U.S.

ELIMINATES FLOODING for most so-called 100-year events

Offers significant **REDUCTION IN FLOODING** from 500-year surge event, larger than Hurricane Katrina

LEEVE AND FLOODWALL ENGINEERING

THE OUTDATED "STANDARD PROJECT HURRICANE" FORMULA WAS
ABANDONED



BASED ON storms that preceded the large Category 3 **HURRICANE BETSY** and the compact, extremely strong Category 5 **HURRICANE CAMILLE**



REPLACED BY MODERN METEOROLOGICAL UNDERSTANDING of the potential for hurricanes and sophisticated risk-based **COMPUTER MODELING**

Levees are now required to **WITHSTAND OVERTOPPING** **BY 500-YEAR** surge events



IMPROVED MATERIALS, including sheet piling and diagonal structure piles

DESIGNS must account **FOR SINKING SOILS** and projected **SEA LEVEL RISE** caused by global warming